

# *Missouri Department of Transportation*

*1999 Annual Report*



*Preserve and improve  
Missouri's transportation  
system to enhance safety and  
encourage prosperity.*

I'm pleased to present to you the 1999 Annual Report for the Missouri Department of Transportation. This document provides a summary of department activities from July 1, 1998, to June 30, 1999. In a separate volume, you'll find a detailed accounting of all MoDOT projects and finances.

Our department has a huge responsibility – building and preserving the nation's sixth-largest state highway system of more than 32,000 miles. We also administer programs to support rail, aviation, transit and waterways improvements. It's a big challenge, but our work force handles it well. We've made significant progress this year. At any given time, MoDOT is coordinating more than 400 construction and preservation projects worth over \$1 billion. We're also investing in new programs that ultimately will provide a better driving experience.

One example is Superpave, a newly developed material we've started to use statewide that enables roads to last much longer. Another example is what we call Intelligent Transportation Systems, or ITS. We're developing these systems in St. Louis, Kansas City, Springfield and Branson to better manage traffic flow through high-tech methods. These include electronic message boards and video monitoring. We're learning that in some areas it's better to make efficient use of existing roads than to build new ones. Making the best use of Missouri's existing highway system will continue to be a prime focus. Highways are a \$60 billion asset, and that investment must be protected by devoting a substantial portion of resources to system preservation.

We're also making great strides in working with our customers. We begin every major project by first asking local citizens what they think of it. We've found in most cases, people have great

ideas that help us do our jobs better. You'll find several examples in the following pages of local groups that worked with us on innovative transportation improvements.

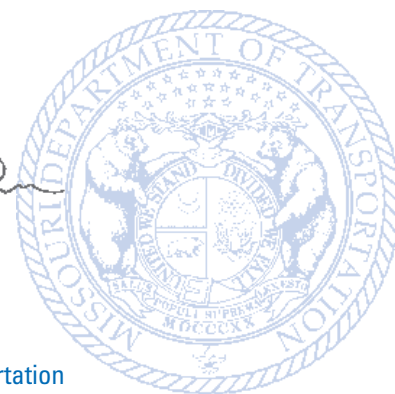
In my short time as director, I've already been impressed with the outstanding potential of our transportation system, the people who build and maintain it, and the citizens who use it every day. I look forward to working with you, the people who are both our customers and shareholders, in making the system even better.



**Henry Hungerbeeler**

Director

Missouri Department of Transportation



# Work in *Progress*

**MoDOT's** 6,000-plus workers are planning, building and maintaining the highway system and providing support for aviation, railroad, transit and waterway transportation. Public officials and travelers have confirmed that MoDOT is doing a better job in recent years, and our goal is to become even better.

Those who've traveled to other states recently sometimes ask why Missouri's roads don't compare well with highways elsewhere. They remember when Missouri's roads were better, and they want to know why Missouri's roads aren't superior if money is being spent on new highways. The answer is Missouri needs to take better care of the existing highway system.

To that end, MoDOT is working to meet transportation commitments with available resources and make Missouri roads as good or better than those in other states. MoDOT will complete the projects in the 5-Year Plan, which includes new construction and a great deal of improvements to our existing system through 2003. And, we will make better use of our resources through innovation.

One example of innovative solutions to transportation challenges is ITS – Intelligent Transportation Systems. Pilot programs for ITS in Springfield and Branson are working well and show promise of being more beneficial as the systems are developed further. In St. Louis and Kansas City, the framework is being built to support ITS on major roads.

**What** guides MoDOT in providing transportation improvements? The focus is on quality for our customers. Transportation customers want the best service there is, and MoDOT will

provide that service. We will also take care of the existing system and develop plans for the future. The existing system is being improved through commitments specified in the Short-Term Action Plan adopted in 1995. MoDOT will complete the commitments in that plan on schedule in the latter part of 1999.

**A** quality transportation system includes safety as a primary concern. Safety will improve as MoDOT provides drivers with better visual information that enables them to make more informed driving decisions. Travelers will see, for example, more emphasis on driver aids such as striping, pavement markers, signs and cleaner, neater roadsides. There will still be emphasis on building highways, but there also will be more attention to enhancements customers need to make better use of highways. As drivers recognize the value of these enhancements, MoDOT expects demand to increase for more system improvements.

**Motorists** will continue to see new construction of roads and bridges, and more resurfacing, in years to come. MoDOT will invest \$240 million a year in preservation through 2003. During the next several years, MoDOT will gather information from the public and initiate discussion about the proper balance of preservation and new construction. The public will be included in discussions because it's essential to know the ideas and preferences of the people who use the system. Their ideas for making highways better will guide MoDOT's planning. A prudent plan will enable us to continue to build new roads and bridges – and preserve and restore the system to keep it in good condition.

## North

MoDOT is excited about the future because resources will be invested so everyone in Missouri can see the benefits. Most Missourians live within two miles of a state road, and by taking better care of our highways, MoDOT will be taking care of Missourians.

Will the public notice improvements? MoDOT will meet with people frequently to hear their feedback on our efforts to make a better traveling experience possible throughout the state.

MoDOT has accomplished a great deal, and we will continue our efforts on a state highway system that is a continual work in progress. The projects listed on the following pages were under construction between July 1, 1998, and June 30, 1999. This list is not inclusive of all projects under construction by MoDOT.

**Route 71** - The highway is being widened from two to four lanes from Nodaway County to north of Route 48.

**Interstate 29** - Eight miles of four-lane highway in Atchison County is being resurfaced from Route A to the Iowa border.

**Route 36** - Route 36 will be widened from two to four lanes for seven miles from Caldwell County to west of Utica.

**Interstate 70** - Westbound Interstate 70 will be resurfaced with Superpave from Lafayette County to the Blackwater River.

**Route 63** - Route 63 is being widened from two to four lanes between Columbia and Moberly, which includes building a new Gateway Western Railroad bridge over the highway.

**Route 36 Mississippi River Bridge at Hannibal** - A new four-lane Route 36 bridge is being built over the Mississippi River at Hannibal to replace a narrow, two-lane bridge.

**Route 61** - Route 61 is being widened from two to four lanes in a nine-mile section between Frankford and New London.

Cathy Morrison



Motorists were helped during construction on the Interstate 70 Blanchette Bridge in St. Louis during the summer of 1998 by information from MoDOT's St. Louis District. This effort earned an Excel Award from the American Association of State Highway and Transportation Officials. Prior to and during the rehabilitation project the department told motorists about alternate routes, car-pooling and other ways to avoid congestion.

An exemplary concrete repair project on westbound Interstate 64 in St. Louis was accomplished by MoDOT's St. Louis District. The district received the 1998 Outstanding Concrete Repair Project of the Year Award from the International Concrete Repair Institute.

## Kansas City

**Route 291** - Route 291 is being widened from two to four lanes. The project includes a Missouri River bridge between Route 24 in Jackson County and Route 210 in Clay County.

**Bruce R. Watkins Drive** - A new four-lane divided highway is being built from 31st Street to the downtown loop. Construction is complete to the Grandview Triangle at interstates 435, 470 and Route 71.

**Route 169** - Route 169 is being widened from two to four lanes from north of Interstate 435 to Smithville.

**Route 210** - A new two-lane road is being built from east of Missouri City to west of Missouri City. This project includes a new bridge.

**Route 7** - This highway was widened from two to four lanes from Harrisonville to Clinton. The project was completed in early summer of 1999.

**Route 13** - Route 13 is being widened from two to four lanes from south of Clinton to St. Clair County. This project includes a new bridge over the Truman Reservoir.

**Lewis & Clark Viaduct** - The eastbound side of this Interstate 70 viaduct is being reconstructed. It is west of downtown Kansas City.

**Interstate 435** - Interstate 435 is being resurfaced between Route 24 and the Missouri River. Bridge rehabilitation is also part of this project.

**Route 152** - This route is being widened from two to four lanes between Route 169 and Interstate 435 in Clay County.

## Central

**Interstate 70** - The eastbound lanes of Interstate 70 between the Rocheport Bridge and Route 740 (Stadium Boulevard) in Columbia are being resurfaced.

**Route 179** - This highway in Cole County is being extended to link Route 50, Edgewood Drive, Route C, Route 54 and Route B. The first phase is under construction. After completion, the new highway will help improve traffic flow.

**Route 63** - Route 63 in Boone County is being widened to four lanes for 7.6 miles from south of Route 22 to south of the Route 124 north junction.

**Route 54, Missouri River Bridge** - Rehabilitation of the westbound bridge on Route 54 over the Missouri River at Jefferson City was completed in the fall of 1998.

**Route 50** - A new bridge and interchange is being constructed on Route 50 and Route 63 at the Osage River east of Jefferson City.

**Route 65** - Route 65 is being widened from Pettis County to the Route 52 south junction.

## St. Louis

**Page Avenue** - Page Avenue is being extended for 20 miles to connect Interstate 270 in St. Louis County to Route 40/61 in St. Charles County. This project includes a new Missouri River bridge and a bridge over Creve Coeur Park.

### Interstate 70 Bridge

**Rehabilitation** - More than 20 bridges are being replaced along the Interstate 70 corridor in St. Louis and St. Louis County.



Cathy Morrison

# Work in Progress

**Route 141** - Route 141 is being relocated and improved from south of Clayton Road to Vance Road. The new road will be a six-lane highway with limited access.

**Manchester Road / Interstate 270 Interchange** - This interchange is being improved from a series of ramps and stoplights to one with ramps, but no traffic lights. The project includes a bridge over Interstate 270.

**Route 21** - Route 21 is being relocated and improved from Schenk Road to DeSoto with four lanes and limited access.

## South

**Route 71** - Route 71 is being relocated and improved to four lanes from Route 60 to existing Route 71 south of Goodman and from south of Goodman to Route 76 near Anderson.

**Route 13** - Route 13 is being widened from two to four lanes from St. Clair County to 1.9 miles south of routes A and C at Lowry City.

**Route 249 (Range Line Bypass)** - Route 249 will provide a high-speed expressway from Interstate 44 in Joplin to Business Route 71 in Carterville.

**Route 65** - Route 65 is being widened from two to four lanes from Springfield to Branson.

**Route 465, Ozark Mountain Highroad** - A new four-lane highway is being constructed as a distributor route near Branson and Table Rock Lake.

**Route 19** - The existing Route 19 roadway is being widened from two to four lanes from north of Cuba to south of town.

**Route 60** - Route 60 is being extended east from the Business Route 63 west junction to east of Route 137. Improvements include the construction of bridges as well as an interchange at Routes 137 and 76.



**Route 63** - Route 63 is being widened from two to four lanes from Route P to south of Willow Springs.

**Interstate 44** - The interstate is being improved at Route Y and Missouri Avenue in St. Robert. The project includes constructing new ramps and signals and relocating the Interstate 44 Business Loop.

**Bill Emerson Memorial Bridge** - The new Bill Emerson Memorial Bridge at Cape Girardeau, spanning the Mississippi River between southeast Missouri and southern Illinois, is being constructed to replace the two-lane bridge.

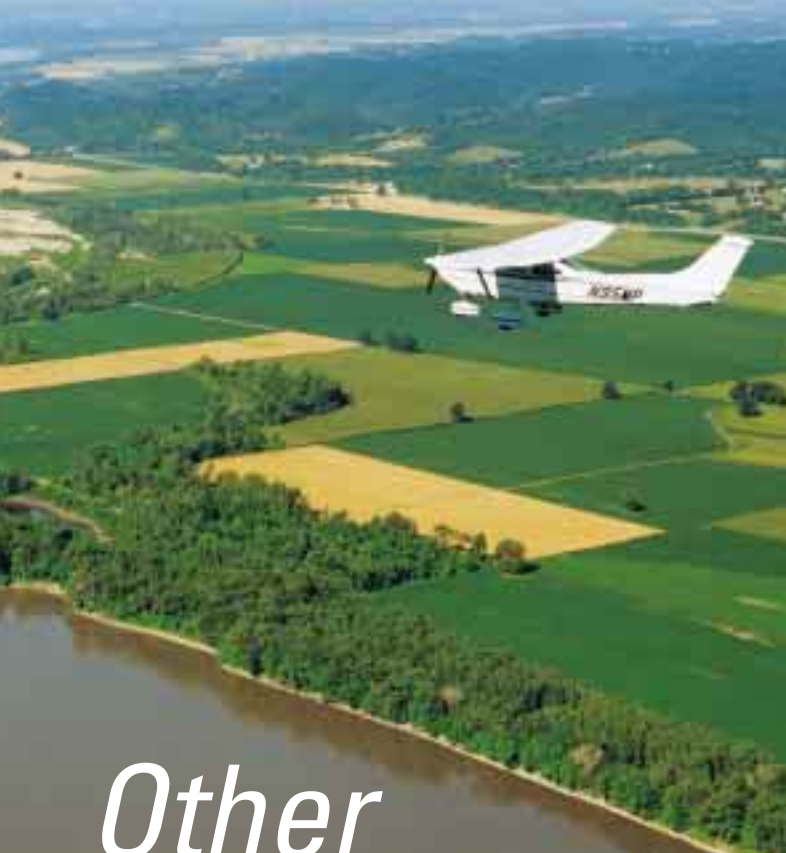
**Route 67** - Route 67 is being relocated around the city of Poplar Bluff. The project includes the construction of five new bridges.

**Route 67** - A portion of Route 67 near Mill Creek in Madison County is being relocated and a new interchange is being constructed at Route E. The project includes the construction of several new bridges and box culverts.

**Route 32** - Route 32 is being relocated from south of Park Hills to Flat River Drive.

**For further information please visit our website at :**

**www.  
modot.state.mo.us.**



## Other Modes

Highways and bridges are not the only means of travel through Missouri's diverse landscape. MoDOT works with cities, counties and regional authorities to plan improvements for aviation, railroad, transit, waterways and bicycle and pedestrian facilities in Missouri. With the Mississippi and Missouri rivers crossing the state, water transport is vital to regional commerce. Missouri is a national leader in rail service as well, due to its location in the center of the country. Aviation opportunities directly impact Missouri's local economies, and mass transit options range from metropolitan bus service to rural transit assistance.

### Aviation

Missouri has almost 500 aviation facilities, including airports, heliports, seaplane bases and a stolport – an airport for aircraft that can take off and land on a relatively short airstrip. The state is home to more than 6,200 registered aircraft and about 12,000 registered pilots. Eight airports currently provide scheduled air service by commercial airlines.

Last year, in the 1998 legislative session, a new jet fuel sales tax law was passed. The law transfers a portion of sales tax collected on jet fuel from the General Revenue Fund to the state Aviation Trust Fund to be used specifically for aviation projects. More than \$2.8 million was transferred into the trust fund in 1999 for various runway and other airport improvements. The revenue supports the operating cost of air traffic control towers at Jefferson City and Cape Girardeau airports and a new state safety program to install taxiway reflectors at lower activity airports.

Federal funds administered by the aviation section were also used for seven capital improvement projects completed this year. This included the construction of a new general aviation airport in Warsaw and new runways at Monett, Cuba, Farmington and Creve Coeur.

### Public Transit

MoDOT administers state and federal programs for Missouri's 37 public transportation systems all across the state. During 1999, more than 200 vehicles for the general public and specialized transportation fleets were purchased with federal dollars administered by MoDOT. Two hundred nonprofit organizations, such as OATS Inc., that provide transportation services for elderly or disabled clients, were offered operating assistance in 1999. The department helped train more than 1,500 drivers in operating passenger equipment effectively and safely.

Missouri obtained \$3 million of discretionary funding under the new Federal Transit Administration Job Access and Reverse Commute Program. Local project sponsors include Southeast Missouri State University, City Utilities of Springfield, Meramec Regional Planning Commission, OATS Inc. and Ray County Transit. The funding will be used to provide transportation and

other related services to welfare recipients and low-income workers. Federal funding was recently received for a commuter rail study along the St. Louis-Kansas City corridor. The study will determine whether increasing train frequency along the corridor will encourage commuters and business travelers along the route to use passenger rail service.

## Railroads

Missouri's railroad system, with more than 4,400 miles of track, is the ninth largest in the nation. Kansas City and St. Louis are among the busiest freight terminals in the United States. State-supported passenger rail service between St. Louis and Kansas City includes eight intermediate stops. Two round trips provided each day carried 202,000 passengers in 1999.

Passenger rail service from St. Louis to Kansas City was evaluated this year to find ways to curb rising costs for the operation of the passenger rail service and to provide information on the service. Ridership is increasing at a steady pace. Passengers enjoy traveling by train and are satisfied with current service and performance. A full copy of the report is available on MoDOT's web page at [www.modot.state.mo.us](http://www.modot.state.mo.us).



MoDOT is also working with eight other states in the Midwest Regional Rail Initiative, an effort to create a multi-state higher-speed passenger rail system throughout the Midwest. MoDOT has invested in a railroad crossing program to improve the safety of 45 railroad-highway intersections.

## Waterways

The value of cargoes handled in and out of Missouri by inland water transportation is almost \$4 billion annually, including more than \$2 billion in exports. Technical assistance in port development and operations is provided by MoDOT to Missouri port authorities. State funding is available for port authorities to administer their development programs. Capital funds are provided to improve and construct port facilities.

Twelve port authorities received administrative financial assistance from MoDOT during 1999. Two ports that operate publicly owned ferry-boat services across the Mississippi River received operating funds. In addition, Missouri appropriated funding for the first phase of capital-improvement projects at four port authorities.



## Bicycles and Pedestrians

Walking and cycling are the first and second most common forms of personal transportation in the world – many Missourians walk or ride bicycles for recreation. Each year, more than 1 million Missourians bicycle, and about 3.75 million Missourians walk as a recreational activity.

During 1999, MoDOT conducted 10 studies in Missouri cities to determine their “walkability.” A city’s walkability is characterized by a safe, friendly and aesthetically pleasing atmosphere for pedestrians and bicyclists.

MoDOT is a partner in the Missouri Bicycle and Pedestrian Advisory Committee. The group is comprised of bicycle and pedestrian advocates who encourage those modes of transportation and advise state government on ways to make areas more accommodating for cyclists and pedestrians.

# Community

## Friends

The Motorist Assist program in St. Louis and Kansas City helps motorists with a variety of problems on interstate highways from early morning to late evening on weekdays.

Motorist Assist workers patrol more than 125 miles of interstate in St. Louis with a fleet of 14 trucks. In the past year, St. Louis Motorist Assist made almost 31,000 stops, mostly for mechanical assistance, tire changes and fluid replacement. The 24 St. Louis Motorist Assist operators patrolled more than 1 million miles on the region's highways.

In the Kansas City region, Motorist Assist expanded to new areas with more equipment and staff. Additional funding from a congestion-management committee of the Mid-America Regional Council added four new trucks and eight additional operators to Motorist Assist.

Operations for the program moved to a new downtown Kansas City location during 1999. The new office site is more centrally located to Motorist Assist zones, drivers have better access to Interstate 70 and the facility is large enough to accommodate additional expansion.

Kansas City's eight Motorist Assist workers currently patrol 30 miles of interstate, and the program's expansion will more than double Kansas City's Motorist Assist coverage – adding 34 miles of interstate. During the last year, more than 11,000 stops were made to help motorists.



Relocation of Route J in Cape Girardeau County was planned with the community by a MoDOT team from the Southeastern District. The team won a Trailblazer Award from the American Association of State Highway and Transportation Officials for its work. The community and MoDOT found a way to close old Route J that would allow a company to begin work on a new facility while minimizing inconvenience to residents.

# Partners



Shaun Schmitz

## Neighbors

**MoDOT's Adopt-A-Highway (AAH) program** is a public/private partnership committed to cleaning and beautifying Missouri's roadsides. The program has many benefits for Missouri, including providing anti-litter education and improving roadside appearance. The Missouri AAH program has approximately 4,700 volunteer groups responsible for 7,000 miles of roadway. If MoDOT did the work of those AAH volunteers, the cost to taxpayers would have been as high as \$2.35 million.

**Growing Together** is a MoDOT program that enables local groups or governments to maintain shrubs, trees and flowers they plant on state-owned land. There are about 30 Growing Together projects around the state. In the town of Cuba, for example, MoDOT is working with the Viva Las Cuba Society to landscape the interchange at Route 19 and Interstate 44. MoDOT will design the landscaping and the Viva Las Cuba Society will provide, plant and maintain the vegetation.



Cathy Morrison

# Partners Community

## Customer Service Centers

A toll-free number (1-888-ASK-MODOT, 275-6636) provides immediate access to MoDOT's Customer Service Centers throughout Missouri. The Customer Service Centers serve as clearinghouses for all inquiries and service requests. Calls are routed to the nearest MoDOT office. Callers can report transportation emergencies, obtain answers to transportation questions, share transportation needs and concerns, order maps and other transportation materials, check on road conditions and learn the status of construction projects.

Through another toll-free number (1-800-222-6400) drivers can obtain recorded information on Missouri's road conditions.

MoDOT works with the Missouri State Highway Patrol to provide this service, which also is available on the internet at [www.modot.state.mo.us](http://www.modot.state.mo.us).

## Partners

MoDOT and Kansas City are working together by sharing a new facility that houses MoDOT's Kansas City area construction and maintenance functions and the city's public works and water services operations.

# MoDOT Profile

## Harold Ellis

MoDOT - St. Louis



**Motorist Assist Operator Harold Ellis** began his career at MoDOT 15 years ago in the St. Louis maintenance department. Two years later, Ellis earned a position as crew leader at the St. Louis sign shop. But when Motorist Assist operator jobs were first offered in 1992, Ellis jumped at the opportunity. He liked the idea of helping people first-hand on the highways and seeing the immediate result of his work.

"I liked the fact that being a Motorist Assist operator would give me a chance to talk and interact with our customers," Ellis said. "That's what really drew me to the job."

Motorist Assist operators respond to incidents on the highways and alleviate traffic congestion. Ellis says to him, the program works on a much more personal level.

Judging from returned customer surveys, motorists know exactly how valuable this service is. "With every assist, I always try to make each customer feel at ease and good about the service ... That's satisfying to me."

After receiving training in CPR, first aid, customer relations and basic motorist assist operations, Ellis began patrolling St. Louis' highways. He currently covers a portion of interstates 70 and 55 near downtown St. Louis from 4 a.m. to 12:30 p.m. Ellis said Motorist Assist "has improved traffic control methods by 200 percent." And this translates into added safety for the public.

"What people really don't realize is how many lives are being saved by assisting these disabled motorists and keeping them safe from the rushing traffic."

The new South Consolidated Service Center -- located on 87th Street just west of Interstate 435 -- includes a shared salt-storage dome and fueling station. The agencies will use a card system to track each department's use of road salt and fuel while enjoying the efficiencies of the shared facility. The city and MoDOT share the costs of maintaining the site.

MoDOT's Northwest District worked with St. Joseph in a cooperative effort to build a rock sculpture of the Pony Express silhouette on the state right of way. The idea was that of MoDOT Utilities Engineer Gary Morris. The plan was to build a silhouette measuring 60 feet tall and 80 feet wide on the western right of way on Interstate 229. Forty-eight tons of four different colors of rock, from four states, were used in the construction.

MoDOT arranged the labor of work-release prisoners from the Western Reception, Diagnostic and Correction Center in St. Joseph. Five community organizations donated money to purchase the materials, and MoDOT provided the building site. The final product is a true community work of art.

Shaun Schmitz



Forty-eight tons of four different colors of rock, from four states, were used in the construction of the Pony Express silhouette along Interstate 229 near St. Joseph.

# MoDOT Profile

## Dr. Jerry Cooper

Hickman Mills School District

The initial concept to improve the interchange of Interstate 435, Interstate 470 and Route 71 in south Kansas City, known as the Grandview Triangle, was based on sound engineering, but fell short in meeting community expectations. Jerry Cooper,

superintendent of the Hickman Mills

School District, was initially among MoDOT's strongest critics. Concerned about safety, access and the viability of the neighborhoods within his school district, Cooper challenged MoDOT to change early design elements that concerned the community.

MoDOT welcomed his input; Cooper was selected by the department to join the Triangle advisory group. Over the course of nine months, Cooper and more than 30 other members of the group produced with MoDOT a concept that satisfies community needs and delivers well-designed transportation improvements.

Cooper was impressed by MoDOT's willingness to incorporate community input and make major changes that now have elicited overwhelming support. "MoDOT has done a fantastic job of listening to people on a consistent basis, getting feedback and then providing follow-through on what they heard," Cooper said.

MoDOT is moving forward with construction plans and anticipates starting work in early 2001.



Shaun Schmitz

## Community Partners

More than \$166,000 was saved on a bridge replacement project in the North Central District because MoDOT worked with city and county officials and the public to completely close a road during bridge construction. Before construction began, project leaders determined that if Route M in Linn County could be closed completely, a bridge could be replaced much earlier than anticipated. With the cooperation of leaders from Brookfield, Linn County and area residents, the bridge project was opened in 14 days rather than 21. Total cost of the project was just \$878,000 instead of the proposed \$1.05 million.

MoDOT personnel in the Northeast District are working with the Route 19 Missouri River Bridge Transportation Corporation, consisting of local officials and citizens from the Hermann area, to move ahead with plans to build a new river crossing there. The location study is near completion, and detailed design is scheduled to begin by the end of the year.

The project will be funded from three sources. MoDOT will contribute 20 percent, and the transportation corporation will contribute 20 percent raised by issuing bonds and operating the bridge as a toll facility. The remaining 60 percent is expected to come from the federal government in the form of discretionary bridge monies. Construction is tentatively scheduled to begin in 2003, pending approval and receipt of federal bridge funding.

The Governor's Award for Quality and Productivity was presented to MoDOT's Grandview Triangle Team from the Kansas City District for outstanding teamwork. The team received the award for its Value Engineering Study of the Grandview Triangle, which is the intersection of Interstate 435, Interstate 470 and Route 71 in south Kansas City.



Joel Blobaum

# Partners Community

MoDOT's Springfield District was the first in Missouri to forge a partnership allowing a community to take advantage of State Infrastructure Bank funding. The result? The major interchange redesign at Sunshine Street and Route 65 in Springfield will be completed about five years earlier than would have been possible with traditional funding methods.

MoDOT is proud to help communities tap into innovative funding resources and to team up with them to get needed projects under way.

An aerial photograph showing a two-lane road that curves through a dense forest. The trees are in various shades of green, yellow, and orange, indicating autumn. The road is light-colored and has a white line down the center. In the background, there are more trees and some open fields.

# *Safe*

Cathy Morrison

Fort Leonard Wood, a military base located in the south central section of the state at St. Robert, has increased in size over the last two years because of the addition of new chemical and military police schools. The military influx is expected to increase the population of the Fort Wood/St. Robert area by 10,000 to 13,000 people. As a result of the growth, developers are building hotels, restaurants and housing in the immediate area around St. Robert.

Transportation is the next step. MoDOT is working with St. Robert to accelerate a project at the Interstate 44/St. Robert interchange and with a consultant to analyze area transportation needs. The consultant is gathering information to determine immediate improvements and will plan long-range needs.

# Highways

**MoDOT** understands public awareness and education are essential to transportation safety. In June 1999, MoDOT began a statewide broadcast campaign to remind motorists to slow down and exercise caution and patience while driving through work zones. MoDOT revised three lively, animated television commercials that have been used successfully in other states to promote work zone safety on Missouri highways.

**MoDOT** co-sponsored several anti-aggressive driving campaigns with the Missouri State Highway Patrol. These campaigns targeted driving practices on high-volume roadways and intersections. Highway Patrol officers issued written warnings and citations to drivers for exceeding speed limits,

passing improperly, failing to signal properly and other violations and unsafe practices at the targeted locations.

MoDOT advertised the locations before and during the week-long campaigns with news releases and variable message boards.

**MoDOT** partnered with the Missouri Division of Highway Safety to launch the Missouri Millennium Promise project. The goal of this campaign is raising public awareness by asking drivers to sign cards promising to be safe and responsible. Traffic accidents are a serious health risk, and the Millennium Promise card urges people to wear safety belts, use child safety seats correctly, drive sober, avoid aggressive driving and obey traffic laws. Safety brigades throughout the state set a target of 2 million safe-driving promises by 2000.



# Total Driving

Missourians in 4,700 Adopt-A-Highway groups take care of about 7,000 miles of roadways. If MoDOT did the work of the Adopt-A-Highway volunteers, the annual cost would be as much as \$2.35 million.

All span-type bridges in MoDOT's system are inspected every year to ensure their safety for motorists.

Missouri used more than 1 million gallons of paint and 10 million pounds of reflective beads to stripe roadways during 1999.

455 JN7

Missouri has more than 4.7 million registered vehicles and 4.3 million registered drivers.

MoDOT plants wildflowers and native grasses along Missouri roadsides to reduce maintenance costs and provide wildlife habitat.

During the past six and one-half years, more than \$3 billion in construction has been accomplished through 1,500 Missouri bridge and highway projects.

About \$4 million annually is spent on picking up litter. Adopt-A-Highway groups help keep litter costs down.



# *Experience*



MoDOT maintains 385,000 acres of roadsides. The cost of mowing roadsides is about \$20 million per year.

Missouri motorists statewide will be driving on smoother highways paved with a new type of longer-lasting asphalt. MoDOT began using Superpave on all major asphalt construction projects in 1999.

Cathy Morrison

Snow removal each winter costs about \$30 million.

Each year MoDOT installs over 100,000 new highway signs.

# Intelligent Transportation

**H**ow can MoDOT improve existing roads to carry more cars and more people, with more safety and convenience? The answer is found in traffic science. MoDOT is introducing state-of-the-art technologies called Intelligent Transportation Systems (ITS) to manage traffic on today's roadways. This ensures safer travel and reduces the need to build new roads.

**D**rivers in Missouri can already use ITS technologies in the Springfield and Branson areas and will soon be enjoying them in both Kansas City and St. Louis. In the future, these will be part of a statewide ITS network.

**I**n each of Missouri's ITS programs, traffic sensors implanted in the pavement and strategically placed closed-circuit television cameras record current traffic conditions. This data is fed to a

Traffic Management Center, where the information is sent to the public in several ways. Twenty-four hours a day, whether through highway radio broadcasts, flashing roadside message signs, websites or other technologies, ITS brings information to those who need it -- the drivers.

**I**n Springfield, drivers praise the signal system connecting major routes throughout the metro area. Traffic engineers from the city and MoDOT work side by side to coordinate signal timing. Drivers now enjoy fewer stops and starts as they cross the city on major thoroughfares. (Springfield's ITS information center is pictured on the facing page.)

**B**ranson's Travel and Recreation Information Program (TRIP) tells drivers what's happening with the music mecca's legendary traffic. Many times, people want to be right in the midst

**MoDOT's SiteManager Training Team received an Exemplary Partner Award from the American Association of State Highway and Transportation Officials. The team developed a highly successful training plan for implementing the SiteManager construction management system.**



Bob Greenspan



Edward J. Durrill

of it, but if they're rushed or need to meet a schedule, TRIP can help. Using an internet website, motorists find up-to-the-minute traffic conditions and road construction information. While on the road, they use ITS technologies to learn about the area's new roadway system. Throughout the tourist community, they use interactive computer terminals for the latest traffic and weather information.

**Kansas City Scout**, an extensive freeway management system, is a partnership between the Missouri and Kansas transportation departments. Like TRIP, Scout will use pavement sensors, closed-circuit TV cameras, flashing roadside message signs and

radio broadcasts to let drivers know where traffic is flowing smoothly – and where it isn't.

**St. Louis' Gateway Guide** will help ease growing traffic congestion headaches. Gateway Guide will provide real-time traffic information for drivers and emergency services. It also expands the Motorist Assist program. MoDOT Motorist Assist employees patrol the most congested roadways and help drivers that have flat tires, car trouble or other difficulties. ITS brings added safety and convenience to drivers on Missouri roadways. It's a move into the future, brought to you by MoDOT today.

# Research *Innovations*



Cathy Morrison

**As** Missouri's traffic volumes grow, so does the demand on the transportation system. MoDOT's research, development and technology improve on traditional practices in design, construction, operation and maintenance. Some specific projects include ground-penetrating radar, high-performance concrete, composite reinforcements, updated grading discs, longer-lasting pavement and new methods of pavement lifting and marking.

## **Ground-Penetrating Radar**

**When** highways are built or slated for repair, MoDOT measures the thickness and condition of the pavement. Conventionally, these measurements are taken by cutting core samples from the

pavement surface. This year, MoDOT is using a new, time-saving technology called Ground-Penetrating Radar (GPR) to measure pavement thickness. A van equipped with a special radar antenna and processing equipment is used to obtain pavement data without cutting the surface. GPR allows the department to gather data about quality of new pavements or condition of old ones. MoDOT is currently conducting research by using GPR in several applications. These include evaluating bridge decks, locating sink holes, caves, tunnels and underground storage tanks; investigating archeological sites; and detecting scour around bridge piers.

# MoDOT Profile

## Concrete Assessment and Rehabilitation

**High-Performance Concrete** MoDOT recently completed the state's first high-performance concrete (HPC) prestress girders for use in the construction of a bridge in Jefferson County. Girders are the horizontal structures that support bridge decks. As a result of the increased strength and durability in the high-performance concrete prestress girders, the bridge has only five girders per span instead of the usual six. Significant long-term savings will be realized because less maintenance and repair are required.

**Composite Reinforcements** Recent tests showed a MoDOT concrete bridge, built in the 1930s and retrofitted recently with a special carbon-reinforced polymer, was 25 percent stronger than it would have been without the addition of the composite material.

The reinforced, cast-in-place concrete bridge was similar to many built during that era. Those bridges were designed to withstand large vertical loads but have almost no lateral support. They often require upgrades to withstand tremors and earthquakes, said Antonio Nanni, a civil engineering professor at the University of Missouri-Rolla (UMR).

When Nanni learned that a bridge close to the UMR campus was being taken out of use by MoDOT, he proposed applying composite reinforcements to the structure and then destroying it in order to determine the materials' strengths. Testing showed all the wrapped portions of the bridge were stronger -- up to 25 percent stronger in some sections -- than unreinforced elements. The National Science Foundation and UMR funded the research project.

## Professor Antonio Nanni

University of Missouri – Rolla

Many highways and bridges were built before the heavy traffic and new technology of our modern age. Some roads and bridges cannot handle the heavy load and high stresses placed on them today. MoDOT examines new ways to rehabilitate these structures. Dr. Antonio Nanni, a University of Missouri – Rolla (UMR) professor, specializes in structure rehabilitation. He advocates the use of strong but lightweight carbon fiber-reinforced polymers. These can be wrapped like a bandage around deteriorating concrete beams and columns or "wallpapered" over the damaged portion of a structure. Nanni helped MoDOT research the benefits of new light-weight bridge materials. When a depression-era bridge on Route 72 near UMR's campus was taken out of service by MoDOT recently, Nanni proposed applying composite reinforcements to the structure and then destroying it. This determined the materials' benefits, and results showed a 25 percent increase in strength.

"In the repair and rehabilitation of buildings and civil infrastructure, these materials may be very competitive on a first-cost basis," said Nanni. He is the Vernon and Marlee Jones Professor of civil engineering at the University of Missouri – Rolla. His research activities and leadership in the field of advanced composite materials is recognized in the United States and internationally.

## All-American Disc

Looking for ways to liberate maintenance crews from time-consuming tasks, MoDOT has engaged a patriotic-sounding solution to repetitive work along roadway shoulders -- the All-American Disc.

Used for spring and fall shoulder maintenance operations, the disc is up to five times more efficient than previous equipment used to perform the same type of work.

The disc enables a one-pass operation that pulls loose gravel from the shoulder back onto the roadway. The disc can be operated at 10 mph, which is faster than a motor grader's 2-3 mph. In addition, a motor grader would have to make at least two trips over the same area to perform the work the disc completes in a single pass.

## Superpave

Missouri motorists statewide will be driving on smoother highways paved with a new type of longer-lasting asphalt. MoDOT began using Superpave on all major asphalt construction projects in 1999 – one year ahead of schedule.

The Superpave system, which stands for Superior PERforming Asphalt PAVement, was developed to build asphalt pavements that will perform better under extreme temperatures and heavy traffic loads.

Conventional asphalt paving tends to crack, rupture and rut in about 10 years. Superpave resists cracks and ruts and is expected to last about 20 years.

## Concrete Pavement Lifting

The Central District in Jefferson City is researching and testing a new process called URETEK for concrete pavement lifting. Currently if pavement is sinking and cracking, mudjacking is used to lift the pavement. A cement, water and agricultural lime mixture is used to fill in voids. However, because of the high water content in the mixture that must be absorbed into adjacent soils, it sometimes takes days or weeks to dry. The URETEK process could eliminate the mudjack method because it uses high-density polyurethane foam to lift, realign and underseal the pavement all in one step.



Cathy Morrison

**MoDOT's Bridge Maintenance Division received the 1998 Annual State Recycling Award for outstanding performance in recycling and waste reduction. The award was given specifically for recycling both the steel grit used in paint removal and the lead from the paint.**

# *Research Innovations*

## **Pavement Management Marking System**

Researchers are studying the condition, reflectivity and durability of approximately 1,000 miles of striping in southwest Missouri. This is part of a pilot program to improve operations, make better use of resources and evaluate materials for pavement and marking.

MoDOT's traffic personnel currently determine the quality of existing pavement markings by visually inspecting them. MoDOT currently restripes almost all routes at least annually.

The research program will include the use of new laser and computer technology to measure the reflectivity of the pavement markings. It is designed to establish a more accurate system for determining the quality of pavement markings at specific locations and predicting how often each location needs to be restriped.

# Customer Services

## Customer Survey

This year MoDOT performed its most comprehensive survey to determine what Missourians think of transportation. The department, working with the University of Missouri-Columbia, conducted phone surveys with randomly selected Missourians. People were asked their opinions about traveling in Missouri and what should be done to improve the state's transportation system.

The surveys included detailed questions on many aspects of MoDOT operations and service. These include road conditions and markings, availability of a variety of transportation options, highway construction and maintenance, safety improvements and customer service. Survey results will be used to guide MoDOT's planning.

## 1999-2000 Highway Map

The 1999-2000 official state highway map was issued in May 1999. About 4.5 million copies of the map, which is printed every two years, were produced. Major changes include addition of inset maps of the Branson and the Lake of the Ozarks areas and a separate map of the Katy Trail. The map's front cover features a scenic photograph of the Current River near Van Buren in Carter County taken by Dennis Bryant, operations engineer at the department's Central District in Jefferson City. The back panel has a map of the Katy Trail, which runs along the Missouri River, including trail access points.



## Pathways

*Pathways*, a quarterly magazine produced by MoDOT, serves as an in-depth source of transportation information for motorists, employees, and others interested in transportation.

*Pathways* covers MoDOT and transportation trends, news, issues, challenges, new technology, practices and products. Although the publication focuses on transportation in Missouri and MoDOT, it also covers some regional and national transportation topics.

Please contact MoDOT if you would like to receive *Pathways*.



## Aeronautical Chart

MoDOT publishes an annual Missouri Aeronautical Chart and Airport Directory. It is provided free of charge and is designed for flight planning purposes to assist pilots using Missouri's system of airports.

You can pick one up at your local airport or by contacting MoDOT.



# *Financial Information*

## **Compliance with Legislation**

To fully comply with accountability legislation, MoDOT has prepared a comprehensive document containing financial statements, transportation project information and planning details. The report is available on the internet at [www.modot.state.mo.us](http://www.modot.state.mo.us). Copies also are available at MoDOT offices in Chesterfield, Hannibal, Jefferson City, Joplin, Kansas City, Macon, St. Joseph, Sikeston, Springfield and Willow Springs.

## **Financial Statements**

MoDOT is required by annual reporting legislation to have financial data verified by an independent accounting and auditing firm. In concurrence with the State Office of Administration, MoDOT retained KPMG Peat Marwick, which reviewed the department's financial statements for the year ending June 30, 1999.

The audit reviews the financial operations of the \$1.3 billion agency, which is responsible for Missouri transportation systems. MoDOT builds and maintains the 32,000-mile state highway system and plans and distributes funds for aviation, waterway, rail and transit needs. Missourians are served by MoDOT's 6,000-plus employees from offices and service buildings in every county in the state.

## **Budgeting by MoDOT District**

MoDOT operates through 10 district offices throughout the state that work closely with local individuals and organizations to provide transportation improvements. Districts handle the details of local expenditures and are held accountable for results.

Management of statewide issues, as well as general guidance, support and leadership, is provided by the Support Center in Jefferson City. The Support Center divisions assist districts in highway design work, bridge design, maintenance and other activities. Support Center expenditures are not directly allocable to the districts.

For Fiscal Year 1999, a total of \$1.3 billion in state and federal highway funds was needed for MoDOT services provided by the 10 districts and Support Center.

## **Recommended Statutory or Regulatory Improvements**

**As** MoDOT continues working to improve construction and preservation of Missouri's transportation system, it will identify specific concerns to be addressed by legislation. MoDOT will work strategically with the Missouri General Assembly to explore ways to accelerate project completion and enhance programs and operations.

**For** the 2000 legislative session, some of MoDOT's recommendations include authorization for "design/build," which allows one contractor to design and build a project rather than bid these contracts separately, resulting in significant time savings.

**MoDOT** also will propose legislation to build, maintain and operate some highways and bridges with tolls, which would allow those projects to become operational sooner.

**The** federal government requires Missouri to pass additional laws to avert drunk driving. If Missouri does not pass these laws in 2000, as much as \$12 million in federal funding would be diverted from highway construction to drunk driving and safety programs. MoDOT will advocate passage of these laws in the next session.

## Missouri Department of Transportation

## Road and Bridge Budget

(in thousands of dollars)

Income:	1999 Actual	2000 Budget	2001 Budget
State Income	\$904,439	957,728	\$1,014,076
Federal Reimbursement	441,280	586,400	569,373
<b>Total Income</b>	<b>\$1,345,719</b>	<b>\$1,544,128</b>	<b>\$1,583,449</b>
<b>Expenditures:</b>			
Administration:			
Personal Services	\$16,890	\$26,244	\$27,294
Employee Benefits	7,818	10,565	13,505
Expense and Equipment	1,830	10,488	10,803
Totals	\$26,538	\$47,297	\$51,602
Construction:			
Personal Services	\$90,945	\$79,625	\$82,810
Employee Benefits	33,790	31,253	31,814
Expense and Equipment	76,172	50,432	53,138
Program and Contractor Payments	566,164	675,021	755,123
Right of Way Land Acquisition	101,716	97,800	70,000
Totals	\$868,787	\$934,131	\$992,885
Maintenance:			
Personal Services	\$106,426	\$115,858	\$120,492
Employee Benefits	45,012	45,973	49,816
Expense and Equipment	127,656	117,830	122,543
Totals	\$279,094	\$279,661	\$292,851
Service Operations: <sup>(1)</sup>			
Personal Services	\$0	\$14730	\$15466
Employee Benefits	0	5980	6109
Expense and Equipment	0	48827	50780
Totals	\$0	\$69537	\$72355
Article X "Hancock" Refunds	\$6929	\$24600	\$0
Other State Agencies	\$166840	\$183500	\$176378
<b>Total Expenditures</b>	<b>\$1,348,188</b>	<b>\$1,538,726</b>	<b>\$1,586,071</b>

<sup>(1)</sup> New category created by reclassification of some expenses

A complete presentation of the department's financial reports is included in Section I of the Accountability Report. The report is available on the internet at [www.modot.state.mo.us](http://www.modot.state.mo.us). Copies also are available at MoDOT offices in Chesterfield, Hannibal, Jefferson City, Joplin, Kansas City, Macon, St. Joseph, Sikeston, Springfield and Willow Springs.

## Missouri Highways and Transportation Commission

The bipartisan Missouri Highways and Transportation Commission is composed of six members and is the governing body of the Missouri Department of Transportation. The governor, with the consent of the senate, appoints the members of the commission to staggered terms of six years each. No more than three commissioners may be of the same political party.

The director, chief counsel and secretary are appointed by the commission.

All other appointments are made by the director, with the approval of the commission.

## Missouri Highways and Transportation Commission

S. Lee Kling, St. Louis, Chairman  
Robert E. Jones, Chesterfield, Vice Chairman  
William E. Gladden, Houston  
Edward D. Douglas, Chillicothe  
Ollie W. Gates, Kansas City  
W.L. (Barry) Orscheln, Moberly

Mari Ann Winters, Secretary to the Commission  
Richard Tiemeyer, Chief Counsel

Henry Hungerbeeler, Director  
J.T. Yarnell, Chief Engineer  
J. Michael Golden, Chief Operating Officer

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Front cover: Route 30 southwest of St. Louis. Photo by Cathy Morrison.  
Insets by Cathy Morrison and Shaun Schmitz.  
Back cover: Bridge construction on Route 50 east of Jefferson City at the Osage River. Photo by Vickie Moran



**Missouri Department of Transportation**

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